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The Transition to a Low Carbon Economy:

The Dynamics of Environmental Stakeholder Networks

ABSTRACT

The transition to a low carbon economy demands new strategies for maintaining competitiveness and benefiting from 'green growth'. A network of stakeholders offers opportunities for, as well as constraints to, organisational growth and successful low carbon strategies. This multiple-case study explores the relational dynamics between the case organisations and a range of stakeholders. We find that stakeholders with institutional power bases are seen as the most influential. Top management is also a critical stakeholder in providing stewardship for the organisation's low carbon initiatives. The study highlights the growing influence of customers upon the success of business strategies aimed at exploiting low carbon opportunities. Intra- and inter-organisational strategy-making practices are emergent arenas for stakeholder management in the context of the low carbon economy.

INTRODUCTION

The low carbon economy in the UK is significant and growing rapidly (CBI, 2012; Green Alliance, 2012). This study adopts an in-depth, multiple case approach to explore the dynamics of emerging environmental stakeholder networks around organisations that are at the heart of the transition to a low carbon economy in the UK. We explore stakeholder relationships around six organisations in four key industry sectors (health, transport, water and construction) to understand the power, legitimacy and urgency of an increasingly diverse set of environmental stakeholders. We highlight the increasingly dense nature of the new networks, and reveal emerging stakeholder management approaches, including increasing participation in strategy-making which demand new organisational practices.

THEORETICAL CONTEXT

Stakeholder Management Theory and Stakeholder Networks

Stakeholder management is a well-established perspective within strategic management. Originating in the mid-eighties (e.g. Freeman, 1984; Carroll and Hoy, 1984), it has explored organisation-stakeholder relationships and interactions. Freeman defined a stakeholder as "any group of individual who can affect or is affected by the achievements of the organisation's objectives" (1984:46). There are a number of key assumptions behind the theory. First, a firm "can be viewed as a set of interdependent relationships among primary stakeholders" (Hillman and Keim 2001:127). Second, the purpose of the firm is not the maximization of shareholder value, but the creation and distribution of value to a plurality of stakeholders. Value creation for stakeholders is the key driver an organisation's long-term survival and its key responsibility (Freeman and Velamuri, 2006). Third, the creation and distribution of value to multiple stakeholders depends on the cooperation and support of the stakeholders themselves.

Contrary to the original focus of the stakeholder management literature on dyadic relationships between the organisation and its shareholders, a growing body of scholars (Calton and Payne, 2003; Frankforter and Hill, 2008; Frooman, 1999; Frooman and Murrell, 2005; Roloff, 2008; Rowley, 1997; Savage et al, 2008) are considering extended notions of stakeholder networks. Rowley (1997) argues that a network perspective on stakeholder relationships allows us to explore how the patterns of relationships in a stakeholder environment influence an organisation's behaviour. He draws attention to two characteristic of organisational networks, density and centrality; and he highlights the way they affect relational dynamics within the network. Increasing network density is associated with increasing variety and intensity (e.g. Oliver, 1991). Rowley (1997) argues that there are two main consequences of dense networks – efficient communication, and the establishment of shared behavioural expectations. These affect the relationship between the focal organisation and its stakeholder network. The focal organisation has less power to resist pressures from stakeholders. In this paper, we explore these ideas in the context of the transition to a low carbon economy in a number of key industry sectors in the UK.

Environmental stakeholders

Environmental stakeholders have been categorised into four main groups (Fineman and Clarke, 1996): (1) groups whose manifest mission is to care for the planet (national and local green pressure groups and individual champions); (2) regulators and government; (3) stakeholders within various green interests (financial stakeholders, customers, suppliers and the media); (4) internal stakeholders. Harvey and Schaefer (2001) considered the role of environmental stakeholders using Mitchells et al's (1997) conceptualisations about the three dimensions of stakeholders' salience for managers: power, legitimacy and urgency. They concluded that stakeholders with an institutional power base, such as government and industry regulators, are seen to be the most influential. Customers and the public were considered to be highly legitimate, and indirectly rather powerful stakeholders, but with little urgency. Employees were also considered to be legitimate environmental stakeholders, but the power and urgency of their environmental claims were somewhat uncertain. Shareholders and owners were considered powerful and legitimate, but not interested in environmental issues and consequently not a driver of environmental management, 'except in a constraining case' (Harvey and Schaefer, 2001).

The transition to a Low Carbon Economy

The transition towards a low carbon economy is identified as a key UK Government priority (Climate Change Act, 2008). The government has set targets for reducing carbon emissions by 20% by 2015, and by 80% lower than the 1990 baseline by 2050. The recent update of the UK government's Plan for Growth (March 2013) states its commitment to support investments into low carbon technologies and employment opportunities in the low carbon sector.

A low carbon economy is defined as 'a way of thinking, behaving and operating that minimises carbon emissions while enabling sustainable use of resources, economic growth and quality of life improvements' (Low Carbon Economic Strategy for Scotland, 2010). It has a focus on both economic and environmental issues. There are two key imperatives to this social and economic transformation: achieving high levels of resource efficiency, and growth of the low carbon goods and services sector. A recent Confederation of Business Industry report states that the low carbon economy could be a real engine for growth in the UK, and currently 'the business response is definitive and emphatic: green is not just complimentary to growth, but a vital driver for it' (CBI, 2012).

The low carbon sector accounted for a third of the total economic growth in the UK during 2011-12 (CBI, 2012). It was worth £122 billion in 2011/12 and has been growing at a rate of 4-5% throughout the economic crisis, since 2008. At present it accounts for 10% of economic activity (Green Alliance, 2012). The government estimates that it employs 940,000 people (around 3% of all UK jobs) and accounts for £10.8 billion of exports (5% of total UK exports during 2011-12).

RESEARCH APPROACH AND METHODS

A multiple-case research design was adopted in this study (Yin, 2003). The case study approach is a well-regarded research strategy for in-depth examinations of organisational practices and performance. It offers insights into the details of social processes in their appropriate context (Harley, 1995). A multiple-case design has distinct advantages over a single case. The evidence from multiple cases is often considered more compelling and robust (Herriott & Firestone, 1983). The data was gathered in six UK companies operating across a range of sectors affected by the low carbon transition: construction (2), water (1), rail (1 train operator and 1 passenger rolling stock manufacturer) and a health services provider. For reasons of confidentiality, we refer to them here as Construction 1 and 2, Water 1, Train Operator 1, PRSM 1 and Health 1.

This study was carried out as part of the Low Carbon Economy Engaged Research Project (LCEERP), a collaborative research project between Derby Business School (University of Derby, UK), Derby City Council and Derbyshire County Council. The research was carried out between January and June 2013, and consisted of two empirical stages. In the first stage, we conducted content analysis of low carbon initiatives, sustainability statements and other relevant reports. In the second stage, we conducted semi-structured interviews and observations with various stakeholders inside and outside the case study organisations. In most instances, the interviews were recorded and fully transcribed. Short follow-up interviews were carried out towards the completion of the project, either in a second round of in-company visits or over the telephone. Analysis consisted of searches for themes relating to stakeholder management and low carbon strategies, both within and across cases.

FINDINGS

Network Density

The central theme that runs across findings from all six cases studied is around the complexity, and the growing intensity, of the environmental stakeholders' networks. Managers at all six companies have confirmed their active engagement in building such networks, with a much greater number and a greater variety of environmental stakeholders than ever before. Increasing network density means greater access to information, greater opportunities to draw on network capabilities and enhanced opportunities for coalition formation. However, as density increases, the ability of a focal organisation's stakeholders to constrain the organisation's actions increases. This means that with growing density of the stakeholder networks, the choices of the focal organisations, and their ability to adopt strong bargaining positions, could become more limited.

Stakeholder type	Examples	Comments
Governmental institutions	City and county councils, chambers of commerce and Local Enterprise Partnerships (LEPs)	Shifting balance from central to local government. Local government involved in steering groups and strategy boards to support regionally funded projects and initiatives.
Environmental management accreditation, consultancy and training companies	The Carbon Trust; ISO14001 and other environmental accreditation providers	Some are well recognised by business practitioners. Carbon Trust accreditation is highly regarded across the sectors as a hallmark of the carbon reduction efforts.
Funding institutions	ERDF, ESF European Agriculture Fund for Rural Development Low Carbon Innovation Fund Low Carbon Networks Fund Green Bank Technology Strategy Board Green Deal	Funding opportunities to support low carbon initiatives are becoming important for businesses, especially SMEs. There is a dedicated low carbon funding stream from EU institutions. Complexity of the bidding process and a costly and bureaucratic approach to reporting deter some potential bidders. UK businesses, especially SMEs, tend to be ill-informed about the funding opportunities, and need greater transparency of information and communication about them.
NGOs promoting social impact Climate change lobbying groups	Climate Change Partnerships, Green Alliance and Climate UK. Derby Carbon Initiative Nottingham Energy Partnership	These organisations are seeking greater legitimacy at national and regional levels. They often rely on EU or UK (central and local) funding. They are often involved in regional strategy boards with the focus on sustainability and low carbon.
Institutions supporting Low Carbon Innovation	Low Carbon Innovation Co-ordination Group (LCICG); Energy Research Partnership; Energy Technologies Institute (ETI); Research institutes at a number of leading universities	Supporting investments in low carbon technologies. Key technologies include bioenergy, carbon capture and storage, electricity networks, hydrogen for transport, offshore wind, electricity storage and marine energy (LCICG, 2014).
HEIs and research institutions	Warwick Global Energy MBA, University of Warwick. MSc in Carbon Management, University of Edinburgh.	Taking part in low carbon debates, providing degree-level qualifications, research opportunities and forming partnerships to build their competences in low carbon

We found that the range of environmental stakeholders has increased. In addition to the green stakeholder categories identified by Fineman and Clarke (1996), we have seen an increase in a number of institutions supporting low carbon innovation, including the Low Carbon Innovation Coordination Group, representing the main public bodies supporting green innovation to high profile university-based research centres and private organisations like Cambridge Cleantech.

Stakeholder Power

Institutional Stakeholders

The data analysis revealed that in all six organisations, institutional stakeholders were considered to be highly influential.

Industry	Comments
Construction	Compliance with environmental legislation is a high priority e.g. recent introduction of the energy efficiency and CO ² emissions targets in building regulations, BREEAM and the Code for Sustainable Homes.

Rail	DfT sustainability agenda set out in the 'Delivering a Sustainable Railway' White Paper (2007). The target is to reduce greenhouse gases and other emissions from transport by 80% by 2050. The government plans to achieve this target by three main strategies, mainly "supporting a shift to new technologies and cleaner fuels", "promoting lower carbon choices" and "using market mechanisms to encourage a shift to lower carbon transport" (DfT, 2007: 1).
Health	Regulatory framework for carbon footprint reduction set out in the NHS Carbon Reduction Strategy for England (2009). Mandatory framework for all NHS organisations to embed sustainability into their operations, management approaches and strategy. Initial target for organisations in the NHS to reduce emissions by 10% by 2015 (from a 2007 baseline) and a further stage target of 34% by 2020 (from a 1990 baseline). Each of the NHS foundation trusts is required to develop and implement carbon reduction strategies to support achievement of these targets.
Water	Compliance with OFWAT environmental policy is written in to water companies operating licences. Critical for companies to meet water standards to satisfy environmental regulators (Drinking Water Inspectorate and Environmental Agency) at national and European levels such as the Urban Waste Water Directive and the Bathing Waters Directive.

Customers and internal stakeholders

Our study revealed that the power of customers was perceived differently across the six case organisations – although customers are becoming increasingly influential in driving companies' commitment to the low carbon economy across all the sectors studied.

Industry	Comments
Construction	Customers are the key stakeholders with high power; specialising in sustainable business solutions for large food retailers (Construction 1) and specialist projects for building re-use, restoration and regeneration (Construction 2). Employees need to observe regulations and comply with environmental standards and 'zero' carbon requirements for construction solutions delivered to customers. Some companies have strong ethics codes towards sustainability when dealing with customers, suppliers and a wider community.
Rail, health, water	Customers are viewed as important, but with little direct power. Water: monopolistic viewpoint that customers have limited choice in access to water NHS Trust's prerogative to ensure health care standards for patients. Train operator's concerns about customer satisfaction reflected in the National Rail Passenger surveys. Employees important, due to the active engagement of the organisations in changing attitudes and behaviours towards sustainability.

Despite employees being critical to the success of a sustainability orientation, they were seen as having little power. However, the top managers, key shareholders and owners were perceived as having critical power in initiating and supporting sustainability initiatives. The importance of such stewardship became a key theme in all the cases studied. Having the top-level management support and visionary leadership was seen as vital for low carbon initiatives in organisations. These initiatives are long-term commitments requiring consistency, focus and substantial capital investments.

Stakeholder Legitimacy and Urgency

Stakeholder type	Examples	Comments
Institutional stakeholders	Local government Local enterprise partnerships (LEPs) Regional chambers of commerce Regulatory bodies, e.g. the Environment Agency and the Department for Environment, Food and Rural Affairs (DEFRA)	Legitimacy is high due to their regulatory status and responsibility for support of the regional low carbon strategies through funding, networks and other activities. The demands made by the institutional stakeholders are seen as urgent in all the cases. The introduction of the mandatory carbon reporting for quoted companies operating in the UK from October 2013 made such demands a high priority for three of our companies (Water1, Train Operator1 and PRSM1). The two construction companies and a NHS trust have confirmed the urgency of the regulatory and governmental bodies in their respective industry and sector.
Environmental management accreditation	Carbon Trust (2011) Various ISO 14001 accreditation providers	Legitimacy is increasing. Carbon Trust Standard is a benchmark for efforts towards low carbon. Urgency of these stakeholders is seen as low.

companies		
Customers	Customer preference for low carbon products and services (e.g. hybrid engines in cars, low energy lighting).	Legitimacy is increasing due to greater competition in the water and rail industries, and the NHS's commitment 'to put patients at the heart of the system' (NHS Constitution, 2013). Construction customers: urgency due to demand from a major supermarket chain to build their stores sustainably to differentiate its business model in its highly competitive industry; demand for sustainable builds also growing from local authorities and HEIs. Customers of water, rail and health: demands not seen as urgent – perhaps due to public sector heritage and relative monopolistic position in providing services.
Suppliers	Provide specialised services (e.g. water treatment), low carbon materials and technologies	Legitimacy is increasing. The two construction companies emphasised the importance of working with suppliers delivering FSC and PEFC timber (certification of the sustainable forestation practices). Urgency is weak, despite the growing reliance of organisations on suppliers to support their low carbon strategies through low carbon products, technologies and services.

Demands of many environmental stakeholders, including suppliers, the public, media, and employees, were not considered to be urgent. Despite the growing reliance of organisations on these environmental stakeholders to realise their low carbon strategies, their demands tend to lack urgency from the perspective of the focal organisation.

Involvement in intra- and inter-organisational strategy-making

Our study revealed increasing participation of various environmental stakeholders in the intra- and inter-organisational strategy-making practices of the organisations studied. The water company, train operator and NHS Foundation Trust were all actively involved with their customers, the general public, suppliers, local authorities and industry/sector regulatory authorities in strategy-making through formal structures like the Carbon Management and Sustainability Steering Group (Health 1), through the 3-stage 2011-2013 customer and stakeholder public consultation process to develop a 2015-20 business plan (Water1) and a steering group to deliver Passenger Focus targets (Train Operator 1).

Our respondents had taken part in inter-organisational strategy-making activities at both national and regional level. These included regional LEP Strategy consultations and Advisory Boards, via the Technology Strategy Board (part of the Department for Business, Innovation and Skills), business community forums, and Energy Partnership initiatives. Successful national and international companies with high environmental credentials are increasingly invited to take part in public consultations and development of the regional strategy for the low carbon sector. Such inter-organisational networks of environmental stakeholders form an arena where political and economic interests are negotiated. Through such negotiations, shared behavioural expectations are established.

CONCLUSIONS

Our data revealed a growing variety and density of stakeholders in the sectors studied – and increasing power and legitimacy in some quarters. An interesting picture also emerged concerning the perceived environmental interest and awareness of the top managers within the case organisations. To many managers, investments in sustainability had to be supported by a strong business case. In the majority of organisations, low carbon initiatives were assessed against the payback requirements for capital investments of 2-3 years. Companies were not prepared to sacrifice their competitiveness in favour of a low carbon orientation. Managers in the case organisations confirmed that low carbon strategies have to aid competitiveness and not drain organisational capabilities.

Our study has a number of limitations. As our data is from a small number of case studies, our geographic coverage and our sector coverage is limited. Future research should focus on a deeper exploration of our main findings – that the density of networks is increasing; that there are shifting patterns of power, legitimacy and urgency across stakeholders (including some sectoral differences); and that strategy-making processes and practices are changing to reflect the new stakeholder networks emerging.

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